2005 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons

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Implementation of the Treaty on the Non-Proliferation of Nuclear Weapons

Report submitted by Peru

1. Situation of Peru with respect to implementation of the Treaty on the Non-Proliferation of Nuclear Weapons

1. Peru signed and adopted the Treaty for the Prohibition of Nuclear Weapons in Latin America in 1968, by Legislative Decree 17105. In 1970, by Decree Law No. 18133, it adopted the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) which establishes an undertaking regarding the peaceful uses of nuclear energy. Since it was planning to put into operation an experimental critical facility or zero power research reactor (PR-0), in 1979 Peru adopted the safeguards agreement with the International Atomic Energy Agency (IAEA) which is set forth in document INFCIRC/273 and which is consistent with that set forth in INFCIRC/153. It also signed a quadripartite agreement with Argentina, the United States and IAEA for the use of nuclear fuel in the PR-0, which noted that the nuclear material belonged to the United States but was being used by Argentina which, in turn, was supplying it temporarily to Peru for the PR-0.

2. In 2001, by means of Legislative Decree No. 27463, Peru adopted the Protocol Additional to the safeguards agreement; the latter was ratified on 15 June 2001 by Supreme Decree No. 049-2001-RE and entered into force on 23 July 2001. At that point Peru started providing the requisite expanded declarations and started the expanded access as required by IAEA.

Start of the safeguards

3. The starting point for the safeguards in Peru was when the nuclear material was transferred from Argentina to Peru. The first design information questionnaire (DIQ) was prepared and submitted to IAEA in order to establish procedures and guidelines for accountancy and control. Facility attachments were drawn up on the basis of that information in order to establish the requisite procedures for accountancy and control, such as types of reports and frequency of inspections and so forth.

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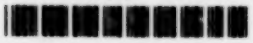

4. As a result of the safeguards agreement, a national system of accountancy and control was set up; it is responsible for verifying and overseeing implementation of the safeguards.

Nuclear material subject to control

5. Initially, the PR-0 used uranium-235 enriched by 20 per cent on average which is considered low enriched uranium (LEU) contained in 232 fuel rods. The location of the PR-0 was called material balance area PE-A which was where the declared nuclear material was used. It should be noted that, at the time the balance area was set up, other nuclear materials, such as natural thorium and depleted uranium, were being used in Peru for non-nuclear purposes; they were included in the same balance area even though they did not have to be reported, given the amounts. In order to facilitate the accounting, Peru requested, in accordance with the safeguards agreement, an exemption from safeguards for the depleted uranium and a termination of safeguards for the thorium.

6. Another nuclear material considered between 1980 and 1990 was uranium recovered from other mining research activities. The total amount of such uranium concentrate is small (less than three kilos) and is kept in storage. The laboratory that did the experiment has been closed down.

Key measurement points

7. The PR-0 facility was called PE-A and two key measurement points (KMP) were established: one in the fuel storage area (KMP A), the other in the reactor core (KMP B). Only two records are required in the facility: the operating records, in order to be able to track the use of nuclear material in the reactor, and the book inventory of nuclear material.

8. In 1984, fuel elements of the type used in materials-testing reactors (MTR) and containing U-235 enriched to less than 20 per cent (LEU) were imported for the 10 Mw power reactor (PR-10) which was then under construction. Since they were stored in PE-A the initial inventory was changed; an inventory change report (ICR), showing an increase in nuclear material, was submitted to IAEA.

9. In 1988, construction of the 10 PR was completed and the MTR-type fuel elements stored in the PE-A facility were transferred to the other facility which, for purposes of the safeguards was designated PE-B. At this point the design information questionnaire was completed for submission to IAEA.

10. In 1990, an additional 28 MTR-type fuel elements were imported from Argentina for use in the PR-0 facility, whose core had been modified. Although the changes to the systems and components of the facility were not great, except in the core, a new design information questionnaire had to be drawn up for submission to IAEA.

11. In 1990, new facility attachments were drawn up for both the PR-0 and the PR-10 facility and they entered into force; they were reviewed and agreed to by a special IAEA mission.

12. The control measures carried out in the first 10 years of safeguards are reflected in the fact that there were close to 100 national inspections of the balance areas and nuclear materials, in addition to the annual inspections that IAEA made

until 1990. During the period between 1978 and 1990 some 50 reports were submitted to IAEA, 18 of which were material balance reports (MBR), another were of which 18 physical inventory listings (PIL) and 15 of which were inventory change reports. These reports related mostly to PE-A but some of them related to PE-B, which was established in 1989. The reports have been in keeping with the format describe in Code 10.

13. The said balance areas have the following features:

(a) Area PE-A: PR-0 critical facility which uses low-enriched U-235 nuclear material. Natural thorium used for making lamps (non-nuclear use) is subject to accounting; currently there are some 2,800 kilos stored in the plant that have not been used. Depleted uranium, which is used for armour plating in cobalt therapy units, has been exempted from safeguards control with IAEA approval;

(b) Area PE-B: 10 Mw reactor which uses low-enriched U-235 nuclear materials. The facility where fresh fuel elements are stored, reactor core, grid box and auxiliary pool have been established as the key measurement points.

14. The operating and internal accountancy records are kept in the balance areas. For the sake of convenience the other major records are kept by the national system of accountancy and control.

15. The rod-type fuel elements, which the PR-0 stopped using in 1988 and which were being stored in material balance area PE-A, were re-exported to Argentina in 1989; the relevant inventory change report was submitted to IAEA together with the notifications required by the relevant quadripartite agreement.

16. Between 1991 and 2004 there were 38 national inspections and 28 IAEA inspections. Reports relating to material balance, physical inventory and inventory changes have also been submitted as required under the safeguards agreement with IAEA. According to the findings of the inspections and the review of such reports by IAEA, Peru has been abiding by its commitments.

17. The national inspections have been carried out routinely and have included verification and complete identification of fresh fuel elements being stored and those located in the core and in the auxiliary pool in the case of PR-10. There is also a requirement to conduct a complete inventory of nuclear material each year.

Protocol Additional to the safeguards agreement

18. Following approval of the agreement, in January 2002, Peru began providing expanded declarations regarding research activities, facilities outside the nuclear materials site, activities of uranium and thorium mines, basic materials and equipment and related non-nuclear materials.

19. Even though not all the activities or materials mentioned in the protocol are being carried out or are present in the country, Peru has made the relevant declaration in the requisite format, indicating that there is nothing to declare. For example, although nuclear material is used as reactor fuel, no other activity or research related to the nuclear fuel cycle is being carried out and Peru does not have any basic materials indicated in the Protocol. It also submits quarterly declarations concerning exports of non-nuclear material and equipment that could be associated to nuclear activities. The information provided to IAEA has always been "nothing to declare" since Peru does not engage in such exports.

20. Within the context of the Additional Protocol there have been four instances of expanded access to places outside the facilities; the four visits were made by IAEA inspectors to verify the declarations submitted.

21. To date Peru has submitted 48 declarations to IAEA as required under the Protocol; there have been no further observations.

2. Peaceful use of nuclear energy and regulation thereof

22. Peru's nuclear activities relate mostly to the use of radiation sources in medicine and industry and, to a lesser extent, in research and education. Currently, it has an inventory of some 3,500 radiation sources. The only nuclear materials in the country are those contained in the fuel elements used by the zero power critical facility and the 10 Mw power reactor, both for purposes of research into and production of radioisotopes.

23. Given their radiological risks, these activities are subject by regulations and rules that have been in effect since 1980. The control system covers permits, inspections, regulation and monitoring of use.

24. As regards safeguards, in 1987 Peru adopted safeguards regulations covering the form and manner of implementing these measures. The regulations were amended in 1989 with a view to clarifying the requirements that all users of nuclear materials must fulfil, in order to help Peru fulfil its commitments. These regulations will have to be reviewed and amended in light of new international obligations.

25. The current regulatory framework consists of:

(a) Act No. 28028 governing the use of sources of ionizing radiation, which was enacted in July 2003. This Act is intended to regulate the peaceful use of radiation sources and it calls explicitly for fulfilment of the safeguards and of the treaties relating thereto;

(b) Regulations concerning authorizations, monitoring, control, violations and penalties relating to Act No. 28028, contained in Supreme Decree No. 041-2003-EM, setting forth obligations concerning the authorization that must be obtained in order to carry out activities with radiation sources, and also monitoring procedures and penalties for violation of the safety rules;

(c) Regulations pertaining to radiological safety, contained in Supreme Decree No. 009-97-EM, setting forth the technical requirements for safety and protection from ionizing radiation, both for workers and for the public and patients undergoing medical exams involving radiation;

(d) Regulations concerning Physical Protection of Nuclear Materials and Facilities, contained in Supreme Decree No. 014-2002-EM, regulating physical protection requirements that must be met in order to protect nuclear materials and facilities from unauthorized removal or sabotage;

(e) Act. No. 27757 restricting imports, which is designed to regulate the entry of radiation sources and equipment into Peru;

(f) Regulations pertaining to Act. No. 27757, listing the specific types of source and equipment that are subject to import control and the requirements for bringing them into the country.

26. The Peruvian Nuclear Energy Institute has been designated as the national authority responsible for overseeing, controlling and monitoring fulfilment of the provisions of the above regulations.

3. International nuclear cooperation for peaceful purposes

27. International cooperation has been provided primarily by IAEA through technical assistance projects involving provision of equipment, training and expert advice in a variety of areas relating to the peaceful applications of nuclear energy and nuclear and radiological safety.

28. International cooperation has also been provided through bilateral agreements with Argentina for the construction of the nuclear power plant, which comprises the nuclear reactor, the production plant and the radioactive waste facility.